



M, 20 - Results

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

**TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)**

Lab ID : CP-RW-2018-05-16-02 **Date:** 17-05-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayapura(P), Bangalore-97.
Customer Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Date of Receipt : 16-05-18
Sample ID No : 2018-05-16-02/01
Type of Mix : BC (Bituminous Concrete)
Date of test : 16-05-18

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	501
2	Weight of the sample After extraction	B	472	471
3	Bitumen percentage	$\frac{A-B}{A} \times 100$ A	5.60	5.99
4	Average percentage	%	5.8	



FOR CIVIL Pro.

R. Karthik Rechan

R KARTHIK RECHAN
Authorized Signatory
Quality Manager



Lab ID : CP-RW-2018-05-16-02

Date: 17-05-18

Sample ID : 2018-05-16-02/01

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 472

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	28	28	6.0	94.0	90-100
9.5	99	127	27.0	73.0	70-88
4.75	66	194	41.0	59.0	53-71
2.36	66	260	55.0	45.0	42-58
1.18	38	297	63.0	37.0	34-48
0.6	24	321	68.0	32.0	26-38
0.3	66	387	82.0	18.0	18-28
0.15	0	387	82.0	18.0	12-20
0.075	57	444	94.0	6.0	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 471

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	47	47	10.0	90.0	90-100
9.5	71	118	25.0	75.0	70-88
4.75	61	179	38.0	62.0	53-71
2.36	66	245	52.0	48.0	42-58
1.18	14	259	55.0	45.0	34-48
0.6	42	301	64.0	36.0	26-38
0.3	47	349	74.0	26.0	18-28
0.15	66	414	88.0	12.0	12-20
0.075	19	433	92.0	8.0	4-10

Note:-

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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Signature
ND
AEC

Signature
Assistant Executive Engineer
Kodigehalli Sub Division
Yelahanka Zone, B.B.M.P.
Bangalore.



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Signature
R KARTHIK RECHAN
Authorized Signatory
Quality Manager



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4, 7TH MAIN MALLESWARAM, BANGALORE -3

**TEST RESULTS OF GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011))**

Lab ID : CP-RW-2018-04-30-02 Date: 02-05-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayana(P), Bangalore-97.
Customer Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 30-04-18
Sample ID No : 2018-04-30-02/01
Type of Mix : BM-Plant (Bituminous Macadam)
Date of test : 30-04-18
Weight of Sample(gm) : 5000

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0	100	100
19	425	425	8.5	91.5	90-100
13.2	1585	2010	40.2	59.8	56-88
4.75	1554	3564	71.3	28.7	16-36
2.36	588	4152	83.0	17.0	4-19
0.3	398	4550	91.0	9.0	2-10
0.075	247	4797	95.9	4.1	0-8
PAN	203	5000	100.0	0.0	0

Note:-

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AE (W)

Ass
Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone B.M.P.,
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Quality Manager

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST REPORT OF AGGREGATE STRIPPING VALUE OF ROAD AGGREGATE (IS:6241)

Lab ID : CP-RW-2018-04-30-02 Date: 03-05-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayapura(P), Bangalore-97.
Customer Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 30-04-18
Sample ID No : 2018-04-30-02/01
Type of Mix : BM(Bituminous Macadam)
Date of test : 30-04-18

Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.9	1.1	98.5	Minimum Retained Coating 95%
2	97.0	3.0		
3	99.6	0.4		

Note:-

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Mptly. N D
AE (w)

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.M.P.,
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2018-04-30-02 Date: 03-05-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyaranyapura(P), Bangalore-97.
Customer Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Hot Mix Plant, Bangalore
Sample Condition : Satisfactory
Date of Receipt : 30-04-18
Sample ID No : 2018-04-30-02/01
Type of Mix : BM (Bituminous Mecadam)
Date of test : 30-04-18

The results of the tests conducted on the Bituminous Macadam mix sample are as follow				
Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	15.42	14.63	9KN(Min)
2	Marshal flow at 60°C, mm	3.68	3.00	2-4
3	Percent air Voids	3.22	3.62	3-5
4	Percent Voids in mineral Aggregate(VMA %)	15.70	14.20	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.60	70.37	65-75
6	Density, g/cc	2.42	2.43	—

Note:-

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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As per N.D.
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Assistant Executive Engineer
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

**TEST RESULTS OF GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011))**

Lab ID : CP-RW-2018-05-14-02 Date: 15-05-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.

Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyananyapura(P), Bangalore-97.

Customer Reference : BBMP/EE/BTP/WO/88/2016-17

Source of Sample : Sample supplied by Agency

Date of Receipt : 14-05-18

Sample ID No : 2018-05-14-02/01

Type of Mix : BM (Bituminous Macadam)

Date of test : 14-05-18

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	481	482
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	3.80	3.60
4	Average percentage	%	3.70	

Atty. N D
AE (wt)



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Lab ID : CP-RW-2018-05-14-02

Date: 15-05-18

Sample ID No : 2018-05-14-02/01

AFTER EXTRACTION(Trail-1)

Weight of Sample : 481 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	43	43	9.0	91.0	90-100
13.2	24	67	14.0	86.0	56-88
4.75	289	356	74.0	26.0	16-36
2.36	91	447	93.0	7.0	4-19
0.3	24	471	98.0	2.0	2-10
0.075	0	471	98.0	2.0	0-8

AFTER EXTRACTION(Trail-2)

Weight of Sample : 482 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading -2)
26.5	0	0	0.0	100.0	100
19	34	34	7.0	93.0	90-100
13.2	58	92	19.0	81.0	56-88
4.75	270	362	75.0	25.0	16-36
2.36	63	424	88.0	12.0	4-19
0.3	10	434	90.0	10.0	2-10
0.075	34	468	97.0	3.0	0-8

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Atty. N D
AEC (C)

Page 2/2
End of Report
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

**TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)**

Lab ID : CP-RW-2018-05-07-02 Date: 09-05-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayapura(P), Bangalore-97.
Customer Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 07-05-18
Sample ID No : 2018-05-07-02/01
Type of Mix : BC-Plant (Bituminous Concrete)
Date of test : 07-05-18
Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	150	150	3.0	97.0	90-100
9.5	1200	1350	27.0	73.0	70-88
4.75	100	1450	29.0	71.0	53-71
2.36	1050	2500	50.0	50.0	42-58
1.18	500	3000	60.0	40.0	34-48
0.6	600	3600	72.0	28.0	26-38
0.3	150	3750	75.0	25.0	18-28
0.15	450	4200	84.0	16.0	12-20
0.075	600	4800	96.0	4.0	4-10
PAN	200	5000	100	0.0	0

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18/05/2018
A.E. (21)

Assistant Executive Engineer,
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

**TEST REPORT OF AGGREGATE STRIPPING VALUE OF ROAD AGGREGATE
(IS:6241)**

Lab ID : CP-RW-2018-05-07-02 Date: 10-05-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyaranyapura(P), Bangalore-97.
Customer Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 07-05-18
Sample ID No : 2018-05-07-02/01
Type of Mix : BC(Bitumenous Concrete)
Date of test : 07-05-18

Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.2	1.8	98.4	Minimum Retained Coating 95%
2	99.6	0.4		
3	97.4	2.6		

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FOR CIVIL Pro.
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Signature: [Handwritten Signature]
Date: [Blank]
Stamp: CIVIL PRO BANGALORE

Assistant Executive Engineer
Kodigehalli Sub Division,
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****End of Report****

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2018-05-07-02 Date: 10-05-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyaranyapura(P), Bangalore-97.
Customer Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Hot Mix Plant, Bangalore
Sample Condition : Satisfactory
Date of Receipt : 07-05-18
Sample ID No : 2018-05-07-02/01
Type of Mix : BC (Bituminous Concrete)
Date of test : 07-05-18

The results of the tests conducted on the Bituminous Concrete mix sample are as follow				
Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.07	15.32	10KN(min)
2	Marshal flow at 60°C, mm	4.27	4.20	2-4
3	Percent air Voids	3.22	4.75	3-5
4	Percent Voids in mineral Aggregate(VMA %)	15.97	15.49	13-15
5	Percent Voids filled with Bitumen(VFB %)	75.16	66.57	65-75
6	Density, g/cc	2.24	2.64	—

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AEL(101)

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Page 1/1
End of Report
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

TEST RESULTS OF STEEL

Lab ID : CP-2018-04-16-11 Date: 18-04-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyananyapura(P), Bangalore-97.
Customer's Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 16-04-18
Sample ID No : 2018-04-16-11 /04
Sample Type : Sunvik
Reference to BIS codes : IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
Date of test: : 17-04-18

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm ²)	(N/mm ²)	(%)		
1	Sunvik	Fe500	8	0.391	512	652	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	10	0.616	528	672	20.0%	Satisfactory	Satisfactory
3	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory

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Signature
A.E.E.

Assistant Executive Engineer,
Kodigehalli Sub Division,
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Bangalore.



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R. Karthik Rechan
R KARTHIK RECHAN
Authorized Signatory
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2018-04-23-02 Date: 25-04-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayana(P), Bangalore-97.
Customer Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 23-04-18
Sample ID No : 2018-04-23-02/01
Type of Mix : WMM (Wet Mix Macadam)
Date of test : 23-04-18
Oven Dry Weight : 10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	0	0	0.0	100.0	95-100
22.4	3200	3200	32.0	68.0	60-80
11.2	2986	6186	61.9	38.1	40-60
4.75	100	6286	62.9	37.1	25-40
2.36	2137	8423	84.2	15.8	15-30
0.6	310	8733	87.3	12.7	8-22
0.075	906	9639	96.4	3.6	0-5

Note:-

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All information furnished by Customer/Representative

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AE (21)

Signature

Page 1/1
Assistant Executive Engineer,
Kodigehalli Sub Division,
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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

TEST REPORT OF AGGREGATE IMPACT VALUE

IS: 2386 Part IV

Lab ID : CP-RW-2018-04-23-02 Date: 25-04-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayapura(P), Bangalore-97.
Customer Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 23-04-18
Sample ID No : 2018-04-23-02/01
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 23-04-18

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	313.0	313.0
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	77.0	76.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	235.7	236.5
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.5
5	Aggregate impact value	(B/A)*100	24.6	24.3
6	Aggregate impact value (Mean of two tests)	Percentage	24.4	

Note:-

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All information furnished by Customer/Representative

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Certificate No.: TC-5548

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2018-04-23-02 Date: 25-04-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayana(P), Bangalore-97.
Customer Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 23-04-18
Sample ID No : 2018-04-23-02/01
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 23-04-18

Result:

Index	Percentage of Flakiness and Elongation Index(%)	Specified limits as per MORTH specification table 400-12
Flakiness Index	8.6	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	16.4	
Combined Flakiness and Elongation Index for WMM	25.0	

Note:-

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Certificate No.: TC-5548

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS MACADAM

Lab ID : CP-RW-2018-04-30-02 Date: 03-05-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.

Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayana(P), Bangalore-97.

Customer Reference : BBMP/EE/BTP/WO/88/2016-17

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 30-04-18

Sample ID No : 2018-04-30-02/01

Type of Mix : BM (Bituminous Macadam)

Date of test : 30-04-18

Table 500-6 : Physical Requirements for Coarse Aggregate for Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.46	Combined Flakiness & Elongation Index for BM is Maximum 35%	IS:2386 Part I
	Elongation Index	12.76		
Strength	Aggregate Impact Value	22.63	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.13	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.18	Maximum 2%	IS:2386 Part III

Note:-

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Certificate No.: TC-5548

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID : CP-RW-2018-05-07-02 Date: 10-05-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.

Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayana(P), Bangalore-97.

Customer Reference : BBMP/EE/BTP/WO/88/2016-17

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 07-05-18

Sample ID No : 2018-05-07-02/01

Type of Mix : BC (Bituminous Concrete)

Date of test : 07-05-18

Table 500-16 : Physical Requirements for Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	'9.9	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	9.4		
Strength	Aggregate Impact Value	23.7	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.91	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.94	Maximum 2%	IS:2386 Part III

Note:-

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Certificate No.: TC-5548

Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2018-04-16-11 **Date:** 19-04-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayana(P), Bangalore-97.
Customer's Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 16-04-18
Sample ID No : 2018-04-16-11 /01
Sample Type : ACC 53grade
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
 IS 4031 (Part 1,2 3,4,5, 6,11):1988
 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
 IS 4031 Part 3, Determination of Soundness, Clause 5, Clause 6
 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
 IS 4031 Part 11, DETERMINATION OF DENSITY , Clause 6

Date of test : 17-04-18

Environmental Conditions during test : Temperature: 26°C
 Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)		—
2	Fineness by Air permeability method (m ² /kg, Min)		225m ² /kg, Min
3	Density (gm/cc)		—
4	Standard Consistency (%)		Not specified
5	Initial Setting time	155 minutes	Not less than 30 minutes
6	Final Setting time	260 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	2mm	Not more than 10 mm

Note:

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Signature
 Assistant Executive Engineer

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 End of Report
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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2018-04-16-11 **Date:** 15-05-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanayapura(P), Bangalore-97.
Customer's Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 16-04-18
Sample ID No : 2018-04-16-11 /01
Sample Type : ACC 53grade
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test : 17-04-18
Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Compressive Strength			
Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm ²	Not less than 27 N/mm ²
2	7 Days	39.0N/mm ²	Not less than 37 N/mm ²
3	28 Days	58.5N/mm ²	Not less than 53 N/mm ²

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Abhijay N D
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Quality Manager



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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

Format No: CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2018-04-16-11 Date: 19-04-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.

Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayapura(P), Bangalore-97.

Customer's Reference : BBMP/EE/BTP/WO/88/2016-17

Source of Sample : Sample supplied by Agency

Sample condition : Satisfactory

Date of Receipt : 16-04-18

Sample ID No : 2018-04-16-11 /02(a)

Sample Type : 40mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 16-04-18

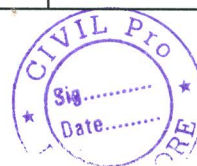
SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm		0	0.0	100	100
2	40 mm		0	0.0	100.0	90-100
3	20 mm		0	0.0	100.0	30-70
4	10 mm		0	0.0	100.0	10-35
5	4.75 mm		0	0.0	100.0	0-5
6	Pan		0	0.0	100	---

Page 1/2

Atty. No
AE (1st)



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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2018-04-16-11

Date: 19-04-18

Sample ID No : 2018-04-16-11 /02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)		Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)		
3	Specific Gravity		—
4	Bulk Density(Loose) (Kg/l)		—
5	Bulk Density(Compacted) (Kg/l)		—
6	Water Absorption(%)		—

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Assistant Executive Engineer
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Quality Manager



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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2018-04-16-11 Date: 18-04-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyaranyapura(P), Bangalore-97.
Customer Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 16-04-18
Sample ID No : 2018-04-16-11 /02(b)
Sample Type/ Size : 20mm down size coarse aggregate
Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption
IS 2386 Part 4: Mechanical Properties
Date of test : 16-04-18

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm		0	0	100	100
2	20 mm		0	0.0	100.0	90-100
3	10 mm		0	0.0	100.0	25-55
4	4.75 mm		0	0.0	100.0	0-10
5	Pan		0	0	100	—

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2018-04-16-11

Date: 18-04-18

Sample ID No : 2018-04-16-11 /02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)		Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)		
3	Specific Gravity		—
4	Bulk Density(Loose) (Kg/l)		—
5	Bulk Density(Compacted) (Kg/l)		—
6	Water Absorption(%)		—
7	Aggregate crushing Value(%)		Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)		30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

Note:

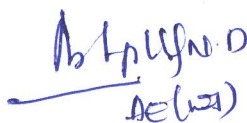
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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2018-04-16-11 Date: 18-04-18

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.

Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyanarayana(P), Bangalore-97.

Customer's Reference : BBMP/EE/BTP/WO/88/2016-17

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 16-04-18

Sample ID No : 2018-04-16-11 /03

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption

Date of test : 16-04-18

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	85	85	8.5	91.5	90-100	90-100	90-100	95-100
3	2.36 mm	145	230	23.0	77.0	60-95	75-100	85-100	95-100
4	1.18 mm	165	395	39.5	60.5	30-70	55-90	75-100	90-100
5	600 micron	187	582	58.2	41.8	15-34	35-59	60-79	80-100
6	300 micron	175	757	75.7	24.3	5-20	8-30	12-40	15-50
7	150 micron	155	912	91.2	8.8	0-10	0-10	0-10	0-15
8	Pan	88	1000	100.0	0.0	---	---	---	---

Result : The tested Sample Conforms to Grading Zone II

Page 1/2

16/4/18 -ND
DE (W)



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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2018-04-16-11

Date: 18-04-18

Sample ID No : 2018-04-16-11 /03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	—
2	Specific Gravity	2.59	—
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

Note:

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Samples will be disposed after 90 days from the date of issue of test certificate

Signature
AE (KOD)

Assistant Executive Engineer
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore
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****End of Report****



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Signature

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL
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Certificate No.: TC-5548

Format No: CP/TF/01

TEST REPORT ON BITUMEN

Lab ID : CP-2018-04-26-02 Date: 28-04-18
Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address : Kodigehalli Sub Division, BBMP, Bangalore.
Project Name : Improvements of roads from amruthahalli main road to hortappa layout in ward no.07 Byatarayanapura, Kodigehalli Sub Division.
Agency : M/s. Samba Shiva Contractor, #04, 2nd Floor, 3rd main, Chamundeshwari layout, Vidyaranyapura(P), Bangalore-97.
Customer's Reference : BBMP/EE/BTP/WO/88/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 26-04-18
Sample ID No : 2018-04-26-02/01
Sample Type : Bitumen
Reference to BIS codes : IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test : 26-04-18

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C, in 1/10th mm	64	60 to 70
2	Softening Point, °C	51.2	Min. 40°C
3	Ductility, cm	98	Min. 75cm
4	Flash point, °C	245	Min. 220°C
	Fire point, °C	272	

Note:

The results pertain to the samples received and tested.
All information furnished by Customer/Representative
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Arjun
Assistant Executive Engineer
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.



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R. Karthik
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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****End of Report****

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